WEST

Generate Collection | Print

Search Results - Record(s) 1 through 9 of 9 returned.

1. Document ID: US 20020102657 A1 WO 200172846 A2 AU 200152970 A

L6: Entry 1 of 9 File: DWPI Aug 1, 2002

DERWENT-ACC-NO: 2001-611619
DERWENT-WEEK: 200253
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: New ligands binding to a specific region of a polymeric immunoglobulin receptor, useful for transporting therapeutic or diagnostic compositions into or across cells expressing pIgR e.g. in drug delivery

INVENTOR: CHAPIN, S J; MOSTOV, K E ; RICHMAN-EISENSTAT, J

PRIORITY-DATA: 2000US-192198P (March 27, 2000), 2000US-192197P (March 27, 2000), 2001US-0818247 (March 26, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20020102657 A1	August 1, 2002		000	C12P021/04
WO 200172846 A2	October 4, 2001	E	102	C07K016/28
AU 200152970 A	October 8, 2001		000	C07K016/28

INT-CL (IPC): A61 K 31/00; A61 K 31/7088; A61 K 38/00; A61 K 39/395; A61 K 47/48; A61 K 48/00; A61 P 11/00; C07 K 14/705 ; C07 K 16/28; C07 K 19/00; C12 N 5/06; C12 P 21/04

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc | Image

2. Document ID: CN 1290479 A

L6: Entry 2 of 9 File: DWPI Apr 11, 2001

DERWENT-ACC-NO: 2001-375840
DERWENT-WEEK: 200140
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: Method for producing ramie hydrid by using periodic light inactivated female line

INVENTOR: ZHOU, R

PRIORITY-DATA: 2000CN-0134101 (December 4, 2000)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CN 1290479 A	April 11, 2001		000	A01H001/02

INT-CL (IPC): A01 H 1/02

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc | Image

3. Document ID: WO 200047611 A2 AU 200027597 A EP 1151000 A2

L6: Entry 3 of 9 File: DWPI Aug 17, 2000

DERWENT-ACC-NO: 2000-549134
DERWENT-WEEK: 200050
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: Novel polypeptides containing pIgR-binding domains used for targeting and transport to the mucosal epithelia, in the treatment of disorders accessible to the mucosal epithelia, e.g. asthma

INVENTOR: CAPRA, J D; HEXHAM, J M ; MANDECKI, W ; WHITE, K

PRIORITY-DATA: 1999US-119932P (February 12, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200047611 A2	August 17, 2000	E	137	C07K014/00
AU 200027597 A	August 29, 2000		000	C07K014/00
EP 1151000 A2	November 7, 2001	E	000	C07K014/00

INT-CL (IPC): C07 K 14/00; C07 K 14/705; C12 N 15/10; C12 N 15/62

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc | Image

4. Document ID: US 6072041 A

L6: Entry 4 of 9 File: DWPI Jun 6, 2000

DERWENT-ACC-NO: 2000-411208
DERWENT-WEEK: 200174
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: Fusion protein useful for protein delivery to target cell especially epithelial cell, comprises single chain Fv molecule directed against transcytotic receptor covalently linked to therapeutic protein

INVENTOR: DAVIS, P B; ECKMAN, E ; FERKOL, T ; LUK, J M ; SCHREIBER, J

PRIORITY-DATA: 1997US-0957333 (October 24, 1997), 1996US-0655705 (June 3, 1996), 1996US-0656906 (June 3, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6072041 A	June 6, 2000		024	C07K001/00

INT-CL (IPC): A61 K 38/00; C07 H 21/02; C07 K 1/00; C07 K 16/00

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

5. Document ID: EP 905237 A2 CA 2241392 A JP 11215989 A

L6: Entry 5 of 9 File: DWPI Mar 31, 1999

DERWENT-ACC-NO: 1999-192665
DERWENT-WEEK: 199917
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: New polypeptides encoding human PIGR-2 useful for treating diseases such as rheumatoid arthritis and multiple sclerosis

INVENTOR: SWEET, R W; TRUNEH, A ; WU, S

PRIORITY-DATA: 1997US-0976293 (November 21, 1997), 1997US-056774P (August 25, 1997)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 905237 A2	March 31, 1999	E	023	C12N015/12
CA 2241392 A	February 25, 1999		000	C12N015/12
JP 11215989 A	August 10, 1999		018	C12N015/09

INT-CL (IPC): A61 K 31/00; A61 K 31/70; A61 K 38/00; A61 K 38/17; A61 K 39/395; A61 K 45/00; A61 K 48/00; C07 K 14/47; C07 K 14/705; C07 K 16/18; C07 K 16/28; C12 N 5/10; C12 N 15/09; C12 N 15/12; C12 P 21/02; C12 Q 1/68; G01 N 33/50; G01 N 33/53; G01 N 33/564; G01 N 33/566; C12 N 15/09; C12 R 1:91; C12 N 5/10; C12 R 1:91; C12 P 21/02; C12 R 1:91

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

6. Document ID: EP 897981 A1 CA 2240631 A JP 11225774 A US 6020161 A US 6232441 B1

L6: Entry 6 of 9 File: DWPI Feb 24, 1999

DERWENT-ACC-NO: 1999-134644
DERWENT-WEEK: 199912

COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: New receptor (PIGR-1) polypeptide and polynucleotide - useful as diagnostic reagents and for prevention and treatment of multiple sclerosis, inflammatory bowel disease and psoriasis

INVENTOR: HURLE, M R; SWEET, R W ; TRUNEH, A ; WU, S

PRIORITY-DATA: 1997US-0955937 (October 22, 1997), 1997US-056152P (August 19, 1997), 1999US-0300985 (April 28, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 897981 A1	February 24, 1999	E	028	C12N015/12
CA 2240631 A	February 19, 1999		000	C12N015/12
JP 11225774 A	August 24, 1999		019	C12N015/09
US 6020161 A	February 1, 2000		000	C12N015/00
US 6232441 B1	May 15, 2001		000	C07K014/435

INT-CL (IPC): A61 K 31/70; A61 K 35/00; A61 K 38/00; A61 K 38/17; A61 K 39/395; A61 K 45/00; A61 K 48/00; C07 H 21/04; C07 K 14/435; C07 K 14/47; C07 K 14/705; C07 K 16/18; C07 K 16/28; C12 N 5/10; C12 N 15/00; C12 N 15/09; C12 N 15/12; C12 P 21/02; C12 Q 1/68; G01 N 33/564; G01 N 33/566; G01 N 33/68; C12 N 15/09; C12 R 1:91; C12 N 5/10; C12 R 1:91; C12 P 21/02; C12 R 1:91

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

7. Document ID: US 6340743 B1 WO 9746588 A1 AU 9730632 A EP 934338 A1 CN 1221428 A US 6042833 A JP 2000511432 W AU 728587 B IL 127238 A

L6: Entry 7 of 9 File: DWPI Jan 22, 2002

DERWENT-ACC-NO: 1998-042123
DERWENT-WEEK: 200208
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: Ligand that binds the stalk of a cell's polymeric immunoglobulin receptor - useful to target to, into or across mammalian epithelial cell biologically active component, e.g. nucleic acid, protein, lipid, carbohydrate, etc

INVENTOR: MOSTOV, K E; RICHMAN-EISENSTAT, J ; MOSTOV, K

PRIORITY-DATA: 1996US-018958P (June 4, 1996), 1997US-0856383 (May 14, 1997), 1999US-0475088 (December 30, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6340743 B1	January 22, 2002		000	C07K016/28
WO 9746588 A1	December 11, 1997	E	042	C07K016/00
AU 9730632 A	January 5, 1998		000	C07K016/00
EP 934338 A1	August 11, 1999	E	000	C07K016/00
CN 1221428 A	June 30, 1999		000	C07K016/00
US 6042833 A	March 28, 2000		000	A61K038/16
JP 2000511432 W	September 5, 2000		046	C12N015/09
AU 728587 B	January 11, 2001		000	C07K016/00
IL 127238 A	July 24, 2001		000	C07K016/00

INT-CL (IPC): A61 K 38/16; A61 K 39/385; C07 K 16/00; C07 K 16/28; C07 K 16/46; C12 N 15/09; C12 N 15/13

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

8. Document ID: FR 1503885 A

L6: Entry 8 of 9 File: DWPI

DERWENT-ACC-NO: 1968-99994P
DERWENT-WEEK: 196800
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: Manufacture of inflatable articles in plastic materials

PRIORITY-DATA: 1966FR-0080321 (October 18, 1966)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
FR 1503885 A			000	

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

9. Document ID: FR 1467169 A

L6: Entry 9 of 9 File: DWPI

DERWENT-ACC-NO: 1968-80378P
DERWENT-WEEK: 196800
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: Cutting and decorating rigid or semi-rigid self

PRIORITY-DATA: 1965FR-0042167 (December 14, 1965)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
FR 1467169 A			000	

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

Generate Collection | Print

Terms	Documents
PIgR	9

Display Format: CIT Change Format

Previous Page Next Page

WEST Search History

DATE: Tuesday, August 27, 2002

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB; PLUR=YES; OP=ADJ			
L11	polyimmunoglobulin	2	L11
DB=TDBD; PLUR=YES; OP=ADJ			
L10	polyimmunoglobulin	0	L10
DB=JPAB; PLUR=YES; OP=ADJ			
L9	L8	0	L9
DB=EPAB; PLUR=YES; OP=ADJ			
L8	polyimmunoglobulin	0	L8
DB=DWPI; PLUR=YES; OP=ADJ			
L7	polyimmunoglobulin	0	L7
L6	PIgR	9	L6
DB=USPT; PLUR=YES; OP=ADJ			
L5	L4.clm.	3	L5
L4	PIgR	31	L4
L3	polyimmunoglobulin	8	L3
L2	6046037.pn.	1	L2
L1	6303341.pn.	1	L1

END OF SEARCH HISTORY

WEST

End of Result Set

Generate Collection Print

L2: Entry 1 of 1 File: USPT Apr 4, 2000

US-PAT-NO: 6046037
DOCUMENT-IDENTIFIER: US 6046037 A

TITLE: Method for producing immunoglobulins containing protection proteins in plants and their use

DATE-ISSUED: April 4, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hiatt; Andrew C.	San Diego	CA	92103	
Ma; Julian K.-C.	London			GB
Lehner; Thomas	Barnet, Herts			GB
Mostov; Keith E.	San Francisco	CA	94116	

US-CL-CURRENT: 435/70.1; 435/320.1, 435/419, 435/468, 435/69.1, 435/69.7, 536/23.5, 536/23.53, 536/24.1, 536/24.3, 800/278

CLAIMS:

We claim:

1. A transgenic plant cell comprising an immunoglobulin comprising a protection protein derived from an immunoglobulin receptor in association with an immunoglobulin derived heavy chain having at least a portion of an antigen binding domain.

2. A transgenic plant cell comprising a nucleotide sequence encoding a protection protein derived from an immunoglobulin receptor.

3. The transgenic plant cell of claim 2 which also comprises a second nucleotide sequence encoding at least one of the molecules selected from the group consisting of: an immunoglobulin derived heavy chain having at least a portion of an antigen binding domain, an immunoglobulin derived light chain having at least a portion of an antigen binding domain, and an immunoglobulin J chain.

4. The transgenic plant cell of claim 3 wherein said second nucleotide sequence encodes an immunoglobulin derived heavy chain having at least a portion of an antigen binding domain; and which also comprises a third nucleotide sequence encoding an immunoglobulin derived light chain having at least a portion of an antigen binding domain.

5. The transgenic plant cell of claim 4 which also comprises a fourth nucleotide sequence encoding an immunoglobulin J chain.

6. A transgenic plant cell comprising a nucleotide sequence encoding a

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
	4443549	April 1984	Sadowski	
	4594244	June 1986	Lehner et al.	
	4607388	August 1986	Koiyumaki et al.	
	4652448	March 1987	Sadowski	
	4736866	April 1988	Leder et al.	
	4870009	September 1989	Evans et al.	
	4873191	October 1989	Wagner et al.	
	5034322	July 1991	Rogers et al.	
	5183756	February 1993	Schlom	
	5188642	February 1993	Shah et al.	
	5349124	September 1994	Fischhoff et al.	
	5352440	October 1994	Gilchrest et al.	
	5352446	October 1994	Lehner	424/150.1
	5352605	October 1994	Fraley et al.	

FOREIGN REFS GROUP (TEST)

480014B1 19911000 EP
484 148 A1 19920500 EP
0 371 017 B1 19940900 EP
WO 87/00551 19870100 WO
WO 90/14430 19901100 WO
WO 91/06320 19910500 WO
WO 91/16061 19911000 WO

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
480014B1	October 1991	EP	
484 148 A1	May 1992	EP	
0 371 017 B1	September 1994	EP	
WO 87/00551	January 1987	WO	
WO 90/14430	November 1990	WO	
WO 91/06320	May 1991	WO	
WO 91/16061	October 1991	WO	

OTHER PUBLICATIONS

During et al. Synthesis and self-assembly of a functional monoclonal antibody in transgenic Nicotiana tabacum. Plant Molecular Biology 15: 281-293, 1990.
Bakos et al. Expression and purification of biologically active domain I of the human polymeric immunoglobulin receptor. Molecular Immunology. vol. 31, No. 2, pp. 165-168, May 1994.

Crago et al., "Antisera to the secretory component recognize the murine Fc receptor for IgA," Journal of Immunology 142(11):3909-3912 (1989).
During et al., "Synthesis and self-assembly of a functional monoclonal antibody in transgenic Nicotiana tabacum," Plant Molecular Biology 15:281-293 (1990).
During, "Wundinduzierbare expression und sekretion von T4 lysozym and monoklonalen antikorpern in Nicotiana tabacum," Inaugural Dissertation (1988).
Eliasson et al., "Chimeric IgG-binding receptors engineered from staphylococcal protein A and streptococcal protein G," Journal of Biological Chemistry 263(9):4323-4327 (1989).
Hiatt et al., "Characterization and Applications of Antibodies Produced in Plants," Intern. Rev. Immunol. 10: 139-152 (1993).
Kraehenbul et al, "Receptor-mediated transepithelial transport of secretory antibodies and engineering of mucosal antibodies," Advances in Experimental Medicine and Biology 216B:1053-1060 (1987).
Solari et al., "Cellular location of the cleavage event of the polymeric immunoglobulin receptor and fate of its anchoring domain in the rat hepatocyte," Biochemical Journal 257:759-768 (1989).
Larrick, J. W. and R. Balint, "Recombinant Therapeutic Human Monoclonal Antibodies," The Pharmacology of Monoclonal Antibodies, Chapter 2, pp. 23-48, M. Rosenberg and G.P. Moore eds., Springer-Verlag, Berlin (1994).
Mark, G. E. and E. A. Padlan, "Humanization of Monclonal Antibodies," The Pharmacology of Monoclonal Antibodies, Chapter 4, pp. 105-134, M. Rosenberg and G.P. Moore eds., Springer-Verlag, Berlin (1994).
Hiatt, A. and M. Hein, "Structure, Function and Uses of Anitbodies from Transgenic Plants and Animals," The Pharmacology of Monoclonal Antibodies, Chapter 12, pp. 317-330, M. Rosenberg and G.P. Moore eds., Springer-Verlag, Berlin (1994).
Mostov, Keith A., "Transepithelial transport of immunoglobulins," Ann. Rev. Immol., 12:63-84 (1994).
Carayannopoulos, L. et al., "Recombinant human IgA expressed in insect cells," Proc. Natl. Acad. Sci. U.S.A., 91:8348-8352 (1994).
Huang, Ann L. et al., "Glucocorticoid Regulation of the Ha-MuSV p21 Gene Conferred by Sequences from Mouse Mammary Tumor Virus," Cell, 27:245-255 (1981).
Benfey, Philip N. et al., "The Cauliflower Mosaic Virus 35S Promotor: Combinatorial Regulation of Transcription in Plants," Science, 250:959-966 (1990).
Paszkowski, Jerzy et al., "Direct gene transfer to plants," The EMBO Journal, 3:2717-2722 (1989).
Odell, Joan T. et al., "Identification of DNA sequences required for activity of the cauliflower mosaic virus 35S promoter," Nature, 313:810-812 (1985).
Benfey, Philip N. et al., "Regulated Genes in Transgenic Plants," Science, 244:174-181 (1989).
Mostov, Keith E. et al., "The receptor for transepithelial transport of IgA and IgM contains multiple immunoglobulin-like domains," Nature, 308:37-43 (1984).
Krajci, Peter et al., "Molecular cloning and exon-intron mapping of the gene encoding human transmembrane secretory component (the poly-Ig receptor)," Eur. J. Immunol., 22:2309-2315 (1992).
Krajci, Peter et al., "Molecular cloning of the human transmembrane

secretory component (poly-Ig receptor) and its mRNA expression in human tissues," Biochem. Biophys. Res. Comm., 158:783-789 (1989).
Kraehenbuhl, Jean-Pierre et al., "Transepithelial transport and mucosal defence II: secretion of IgA," Trends in Cell Biol., 2:170-174 (1992).
Banting, George et al., "Intracellular targetting signals of polymeric immunoglobulin receptors are highly conserved between species," FEBS Letters, 254:177-183 (1989).
Piskurich, J. F. et al., "Molecular Cloning of Mouse Polymeric Ig Receptor cDNA," J. Immunol., 150:38, Abstract 203 (1993).
Verbeet et al., GenBank Accession No. X81371.
Williams, Alan F. et al., "The Immunoglobulin Superfamily" Immunoglobulin Genes, Chap. 19, pp. 361-387, Academic Press (Honjo, Alt and Rabbits, Eds. 1989).
Huse, William D. et al., "Generation of a Large Combinatorial Library of the Immunboglobulin Repertoire in Phage Lambda," Science, 246:1275-1281 (1989).
Koshland, Marian Elliot, "The Immunoglobulin Helper: The J Chain," Immunoglobulin Genes, Chap. 18, pp. 345-359, Academic Press (Honjo, Alt and Rabbits, Eds. 1989).
Matsuuchi, Linda et al., "Immunoglobulin J chain gene from the mouse," Proc. Natl. Acad. Sci. U.S.A., 83:456-460 (1986).
Marshall, R. D., "Glycoproteins," Annual Review of Biochemistry, 41:673-702, Annual Reviews Inc. (Snell, Boyer, Meister, and Sinsheimer, Eds. 1972).
Marshall, R. D., "The Nature and Metabolism of the Carbohydrate-Peptide Linkages of Glycoproteins," Biochem. Soc. Symp., 40:17-26 (1974).
Ma, J. K-C. et al., "Specificity of monolconal antibodies in local passive immunization against Streptococcus mutans," Clin. Exp. Immunol. 77:331-337 (1989).
Ma. J. K-C. et al., "Assembly of monoclonal antibodies with IgG1 and IgA heavy chain domains in transgenic tobacco plants," Eur. J. Immunol. 24:131-138 (1994).
Kobayashi, Kunihiko et al., "Studies on human secretory IgA (II). Comparative studies on a fragment of secretory component derived from secretory IgA and fragments obtained by enzymatic digestion of free secretory component," Immunochemistry, 10:73-80 (1973).
McNabb, Paul C. et al., "Host Defense Mechanisms at Mucosal Surfaces," Ann. Rev. Microbiol., 35:477-496 (1981).
Silbart, Lawrence K. et al., "Reduction of Intestinal Carcinogen Absorption by Carcinogen-Specific Secretory Immunity," Science, 243:1462-1464 (1989).
Orlandi, Rosaria et al., "Cloning immunoglobulin variable domains for expression by the polymerase chain reaction," Proc. Natl. Acad. Sci. U.S.A., 86:3833-3837 (1989).
Hiatt, Andrew, "Production of antibodies in transgenic plants," Nature, 342:76-78 (1989).
Smith, Roberta and T. Lehner, "Characterisation of monoclonal antibodies to common protein epitopes on the cell surface of Streptococcus mutans and Streptocuccus sobrinus," Oral Microbiol. Immunol., 4:153-158 (1989).
Rogers, S. G. et al., "Improved Vectors for Plant Transformation: Expression Cassette Vectors and New Selectable Markers," Methods in Enzymology, 153:253-277 (1987).
Cocking and Davey, "Gene Transfer in Cereals," Science, 236:1259-1262 (1987).

Spielmann, Albert et al., "T-DNA structure in transgenic tobacco plants with multiple independent integration sites," Mol. Gen. Genet., 205:34-41 (1986).
Jorgensen, Richard et al., "T-DNA is organized predominantly in inverted repeat structures in plants transformed with Agrobacterium tumefaciens C58 derivatives," Mol. Gen. Genet., 207:471-477 (1987).

Bytebier, Benny et al., "T-DNA organization in tumor cultures and transgenic plants of the monocotyledon Asparagus officinalis," Proc. Natl. Acad. Sci. USA, 84:5345-5349 (1987).
Potrykus, Ingo et al., "Direct gene transfer to cells of a graminaceous monocot," Mol. Gen. Genet., 199:183-188 (1985).
Lorz, Horst et al., "Gene transfer to cereal cells mediated by protoplast transformation," Mol. Gen. Genet., 199:178-182 (1985).
Fromm, Michael E. et al., "Stable transformation of maize after gene transfer by electroporation," Nature, 319:791-793 (1986).
Uchimiya, Hirofumi et al., "Expression of a foreign gene in callus derived from DNA-treated protoplasts of rice (Oryza sativa L.)," Mol. Gen. Genet., 204:204-207 (1986).
Callis, Judy et al., "Introns increase gene expression in cultured maize cells," Genes and Development, 1:1183-1200 (1987).
Marcotte, Jr., William R. et al., "Regulation of a wheat promoter by abscisic acid in rice protoplasts," Nature, 335:454-457 (1988).
Toriyama, Kinya et al., "Haploid and diploid plant regeneration from protoplasts of anther callus in rice," Theor. Appl. Genet., 73:16-19 (1986).
Abdullah, Ruslan et al., "Efficient Plant Regeneration from Rice Protoplasts Through Somatic Embryogenesis," Biotechnology, 4:1087-1090 (1986).
Vasil. Indra K., "Progress in the regeneration and genetic manipulation of cereal crops," Biotechnology, 6:397-402 (1988).
Klein, T. M. et al., "High-velocity microprojectiles from delivering nucleic acids into living cells," Nature, 327:70-73 (1987).
Klein, Theodore M. et al., "Stable genetic transformation of intact Nicotiana cells by the particle bombardment process," Proc. Natl. Acad. Sci. U.S.A., 85:8502-8505 (1988).
McCabe, Dennis E. et al., "Stable transformation of soybean (glycine max) by particle acceleration," Biotechnology, 6:923-926 (1988).
Zhou, Guang-Yu et al., "Introduction of Exogenous DNA into Cotton Embryos," Methods in Enzymology, 101:433-481 (1983).
Hess, Dieter, "Pollen-Based Technigues in Genetic Manipulation," International Review of Cytology, 107:367-395 (1987).
Luo, Zhong-xun et al., "A Simple Method for the Transformation of Rice Via the Pollen-Tube Pathway," Plant Mol. Biol. Reporter, 6:165 (1988).
de la Pena, A. et al., "Transgenic rye plants obtained by injecting DNA into young floral tillers," Nature, 325:274-276 (1987).
Neuhaus, G. et al., "Transgenic rapeseed plants obtained by the microinjection of DNA into microspore-derived embryoids," Theor. Appl. Genet., 75:30-36 (1987).
Benbrook, Charles M. et al., "Herbicide Resistance: Environmental and Economic Issues," in Proceedings Bio Expo 1986, Butterworth, Stoneham, MA, pp. 27-54 (1986).
Horsch, R. B. et al., "A Simple and General Method for Transferring Genes into Plants," Science, 227:1229-1231 (1985).

Fraley, Robert T. et al., "Expression of bacterial genes in plant cells," Proc. Natl. Acad. Sci. U.S.A., 80:4803-4807 (1983).
Brandtzaeg, P. & Prydz, H., "Direct evidence for an integrated function of J chain and secretory component in epithelial transport of immunoglobulins," Nature, 311:71-73 (1984).
Barnes, Wayne M., "Variable patterns of expression of luciferase in transgenic tobacco leaves," Proc. Natl. Acad. Sci. USA, 87:9183-9187 (1990).
Hein, Mich B. et al., "Evaluation of Immunoglobulins from Plant Cells," Biotechnol. Prog., 7:455-461 (1991).
Hiatt, A. et al., "Monoclonal antibody engineering in plants," FEBS Letters, 307(1):71-75 (1992).
Ma, J. K.-C. et al., "Generation and Assembly of Secretory Antibodies in Plants," Science, 268:716-719 (1995).
Lee, C. K. et al., "Oral Adminstration of Polymeric Immunoglobulin A Prevents Colonization with Vibrio cholerae in Neonatal Mice," Infection and Immunity, 62(3):887-891 (1994).
Corthesy, B. et al., "Biochemical Characterisation of Recombinant Secretory component," Experientai, 50:A27, Abstract S08-08 (1994).
Lindh, E., "Increased Resistance of Immunoglobulin A Dimers to Proteolytic Degradation After Binding of Secretory Component," The Journal of Immunology, 114(1):284-286 (1975).

ART-UNIT: 169

PRIMARY-EXAMINER: Smith; Lynette F.

ASSISTANT-EXAMINER: Haas; Thomas

ABSTRACT:

The immunoglobulins of the present invention are useful therapeutic immunoglobulins against mucosal pathogens such as S. mutans. The immunoglobulins contain a protection protein that protects the immunoglobulins in the mucosal environment.

The invention also includes the greatly improved method of producing immunoglobulins in plants by producing the protection protein in the same cell as the other components of the immunoglobulins. The components of the immunoglobulin are assembled at a much improved efficiency. The method of the invention allows the assembly and high efficiency production of such complex molecules.

The invention also contemplates the production of immunoglobulins containing protection proteins in a variety of cells, including plant cells, that can be selected for useful additional properties. The use of immunoglobulins containing protection proteins as therapeutic antibodies against mucosal and other pathogens is also contemplated.

24 Claims, 1 Drawing figures

WEST

End of Result Set

Generate Collection Print

L2: Entry 1 of 1 File: USPT Apr 4, 2000

US-PAT-NO: 6046037
DOCUMENT-IDENTIFIER: US 6046037 A

TITLE: Method for producing immunoglobulins containing protection proteins in plants and their use

DATE-ISSUED: April 4, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hiatt; Andrew C.	San Diego	CA	92103	
Ma; Julian K.-C.	London			GB
Lehner; Thomas	Barnet, Herts			GB
Mostov; Keith E.	San Francisco	CA	94116	

APPL-NO: 08/ 434000 [PALM]
DATE FILED: May 4, 1995

PARENT-CASE:
CROSS REFERENCE TO RELATED APPLICATIONS This is a continuation-in-part of application Ser. No. 08/367,395 filed Dec. 30, 1994, now abandoned, which is hereby incorporated by reference.

INT-CL: [07] C12 N 15/00, C12 N 15/29, C12 N 15/82, A01 H 4/00

US-CL-ISSUED: 435/70.1; 435/69.1, 435/69.7, 435/70.23, 435/320.1, 435/419, 435/468, 800/278, 536/24.3, 536/23.5, 536/23.53, 536/24.1
US-CL-CURRENT: 435/70.1; 435/320.1, 435/419, 435/468, 435/69.1, 435/69.7, 536/23.5, 536/23.53, 536/24.1, 536/24.3, 800/278

FIELD-OF-SEARCH: 800/205, 800/DIG.24, 800/DIG.40, 800/DIG.43, 800/278, 435/69.1, 435/69.7, 435/70.21, 435/172.3, 435/240.4, 435/320.1, 435/70.1, 435/70.23, 435/419, 435/468, 536/23.4, 536/23.5, 536/23.53, 536/24.1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL

protection protein and a nucleotide sequence encoding an immunoglobulin derived heavy chain having at least a portion of an antigen binding domain.

7. A transgenic plant cell comprising a protection protein derived from an immunoglobulin receptor.

8. The transgenic plant cell of claim 7 which also comprises at least one additional molecule selected from the group consisting of: an immunoglobulin derived heavy chain having at least a portion of an antigen binding domain, an immunoglobulin derived light chain having at least a portion of an antigen binding domain, and an immunoglobulin J chain.

9. The transgenic plant cell of claim 8 wherein said additional molecule is an immunoglobulin derived heavy chain having at least a portion of an antigen binding domain; and which also contains an immunoglobulin derived light chain having at least a portion of an antigen binding domain.

10. The transgenic plant cell of claim 7 which also contains an immunoglobulin J chain.

11. The transgenic plant cell of claims 1 or 6 wherein said transgenic plant cell is derived from a dicotyledonous or monocotyledonous plant.

12. The transgenic plant cell of claims 1 or 6 wherein said transgenic plant cell is derived from a solanaceous plant.

13. The transgenic plant cell of claims 1 or 6 wherein said transgenic plant cell is alfalfa cell.

14. The transgenic plant cell of claims 1 or 6 wherein said transgenic plant cell is derived from a tobacco plant.

15. The transgenic plant cell of claims 1 or 6 wherein said transgenic plant cell is part of a plant.

16. The transgenic plant cell of claim 1 wherein the immunoglobulin further comprises an immunoglobulin derived light chain having at least a portion of an antigen binding domain associated with said immunoglobulin derived heavy chain.

17. The transgenic plant cell of claim 16 wherein the immunoglobulin further comprises a second immunoglobulin derived heavy chain having at least a portion of an antigen binding domain associated with said protection protein derived from an immunoglobulin receptor.

18. The transgenic plant cell of claim 17 wherein the immunoglobulin further comprises a second immunoglobulin derived light chain having at least a portion of an antigen binding domain bound to said second immunoglobulin derived heavy chain.

19. The transgenic plant cell of claim 18 wherein the immunoglobulin further comprises immunoglobulin J chain bound to at least one of said immunoglobulin derived heavy chains.

20. The transgenic plant cell of claims 1 or 16 or 17 or 18 wherein said immunoglobulin is a therapeutic immunoglobulin.

21. The transgenic plant cell of claim 20 wherein said therapeutic immunoglobulin binds to mucosal pathogen antigens.

22. The transgenic plant cell of claim 20 wherein said therapeutic immunoglobulin is capable of preventing dental caries.

23. The immunoglobulin of claims 15 or 17 or 18 or 19 or 20 or 21 or 22 wherein said antigen binding domain is capable of binding an antigen from S. mutans serotypes c, e and f.

24. The immunoglobulin of claims 15 or 17 or 18 or 19 or 20 or 21 or 22 wherein said antigen binding domain is capable of binding an antigen from S. sobrinus serotypes d and g.